

**REMARKS**

Favorable reconsideration and allowance of the subject application are respectfully requested in view of the following remarks.

**Summary of the Office Action**

The title stands objected to. ✓

Claims 2, 3 and 5 stand rejected under 35 U.S.C. §112, second paragraph and fourth paragraph as being indefinite and failing to limit the parent claim. ✓

Claim 1 stands rejected under 35 U.S.C. §102(e) as being anticipated by *Hayashi et al.* (U.S. Patent No. 6,278,670).

Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Hayashi et al.* and further in view of *Kasami et al.* (U.S. Patent No. 6,312,780).

**Summary of the Response to the Office Action**

Applicants have canceled claims 2, 3 and 5 without prejudice or disclaimer. The title and claim 1 have been amended by this amendment. Accordingly, claims 1 and 4 remain currently pending. ✓

**Objection to the Title**

The title stands objected to for allegedly being not descriptive. Applicants have amended the title to address the Examiner's concerns. Accordingly, Applicants respectfully request the objection to the title be withdrawn.

**Claim Rejection Under 35 U.S.C. §112, Second Paragraph and Fourth Paragraph**

Claims 2, 3 and 5 stand rejected under 35 U.S.C. §112, second paragraph and fourth paragraph as being indefinite and failing to limit the parent claim. Applicants respectfully

request withdrawal of these rejections of claims 2, 3 and 5 as the cancellation of claims 2, 3 and 5 renders the rejections moot.

**Claim Rejection Under 35 U.S.C. §102(e)**

Claim 1 stands rejected under 35 U.S.C. §102(e) as being anticipated by *Hayashi et al.* To the extent that this rejection might be applied to the claim as newly-amended, it is respectfully traversed as follows.

Applicants respectfully submit that *Hayashi et al.* does not anticipate the present claimed invention because *Hayashi et al.* does not teach or suggest all of the features of claim 1. For instance, it is respectfully submitted that *Hayashi et al.* fails to teach or suggest at least the claimed combination including “a detecting optical system including a photodetector for receiving and photoelectrically converting reflection light from said recording layer of said multi-layered recording medium through said objective lens; wherein said photodetector has a normalized detector size ( $B/\beta^2$ ) of a size of  $10\ \mu\text{m}^2$  to  $50\ \mu\text{m}^2$ , and wherein the normalized detector size ( $B/\beta^2$ ) is given by an equation of  $B/\beta^2 = L^2 / (f_c/f_{OB})^2$  wherein L denotes a size of one side of the photodetector,  $f_c$  denotes a focal distance of the detecting optical system and  $f_{OB}$  denotes a focal distance of the objective lens,” as set forth in claim 1, as newly-amended. ✓

In contrast to the claimed invention as a whole, *Hayashi et al.* discloses a different optical head apparatus. In paragraph 4, the Office Action appears to assert that the spot size as taught by *Hayashi et al.* corresponds to the “normalized detector size” of a photodetector as set forth in claim 1. However, *Hayashi et al.* merely discloses “making  $20\ \mu\text{m}$  the minimum size of the [diffracted light beam] spots 30a to 30c and the [diffracted light beam] spots 31a to 31c of the detection areas 33 and 36 and making  $50\ \mu\text{m}$  the minimum size of the [diffracted light beam]

spots 130a to 130c and the [diffracted light beam] spots 131a to 131c when the minimum spot diameter of the diffracted light beams 9 and 8 on the surface of the photodetector 29 was substantially 40  $\mu\text{m}$ .” Column 10, lines 34-40 and column 11, lines 59-64 of *Hayashi et al.* However, as discussed at page 11, lines 12-19 of the specification, the normalized detector size of a photodetector is given by the following equation:

$$(B/\beta^2)$$

where  $B = L^2$ , an actual photodetector light receiving surface area; and  $\beta = f_c/f_{OB}$ , detecting optical system magnification with  $f_c$  denoting a focal distance of the detecting optical system and  $f_{OB}$  denoting a focal distance of the objective lens. In contrast, no portion of *Hayashi et al.*’s disclosure discusses the relationship between an actual photodetector light receiving surface area and detecting optical system magnification as set forth in Applicants’ claimed invention. ✓

Thus, it is respectfully submitted that *Hayashi et al.* does not teach or suggest the claimed combination including “a detecting optical system including a photodetector for receiving and photoelectrically converting reflection light from said recording layer of said multi-layered recording medium through said objective lens; wherein said photodetector has a normalized detector size  $(B/\beta^2)$  of a size of 10  $\mu\text{m}^2$  to 50  $\mu\text{m}^2$ , and wherein the normalized detector size  $(B/\beta^2)$  is given by an equation of  $B/\beta^2 = L^2 / (f_c/f_{OB})^2$  wherein L denotes a size of one side of the photodetector,  $f_c$  denotes a focal distance of the detecting optical system and  $f_{OB}$  denotes a focal distance of the objective lens,” as set forth in claim 1, as newly-amended.

MPEP § 2131 states “[t]o anticipate a claim, the reference must teach every element of the claim.” Applicants respectfully submit that since *Hayashi et al.* does not teach or suggest all

of the features of claim 1, *Hayashi et al.* does not anticipate claim 1. Accordingly, withdrawal of the rejection of claim 1 under 35 U.S.C. §102(e) is respectfully requested.

**Claim Rejection Under 35 U.S.C. §103(a)**

Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Hayashi et al.* and further in view of *Kasami et al.* This rejection is respectfully traversed.

It is respectfully submitted that *Kasami et al.* fails to cure the deficiencies of *Hayashi et al.* as discussed above because no portion of *Kasami et al.*'s disclosure discusses the relationship between an actual photodetector light receiving surface area and detecting optical system magnification. Thus, *Kasami et al.* also does not teach or suggest the claimed combination including "a detecting optical system including a photodetector for receiving and photoelectrically converting reflection light from said recording layer of said multi-layered recording medium through said objective lens; wherein said photodetector has a normalized detector size  $(B/\beta^2)$  of a size of  $10\ \mu\text{m}^2$  to  $50\ \mu\text{m}^2$ , and wherein the normalized detector size  $(B/\beta^2)$  is given by an equation of  $B/\beta^2 = L^2 / (f_c/f_{OB})^2$  wherein L denotes a size of one side of the photodetector,  $f_c$  denotes a focal distance of the detecting optical system and  $f_{OB}$  denotes a focal distance of the objective lens," as set forth in claim 1, as newly-amended.

Applicants respectfully assert that the rejections under 35 U.S.C. § 103(a) should be withdrawn because neither *Hayashi et al.* nor *Kasami et al.*, whether taken singly or combined, teach or suggest each feature of claim 4. MPEP § 2143.03 instructs that "[t]o establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 409 F.2d 981, 180 USPQ 580 (CCPA 1974)." Thus, Applicants respectfully submit that claim 4 is allowable at least because of its dependence upon claim 1 and

for the reasons set forth above. Accordingly, withdrawal of the rejection of claim 4 under 35 U.S.C. §103(a) is respectfully requested.

**Conclusion**

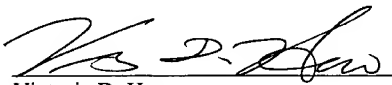
In view of the foregoing, withdrawal of the rejections and allowance of the pending claims are earnestly solicited. Should there remain any questions or comments regarding this response or the application in general, the Examiner is urged to contact the undersigned at the number listed below.

Attached hereto is a marked-up version of the changes made by the current amendment. The attachment is captioned "Version with markings to show changes made."

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE TITLE:**

The title has been amended to read as follows.

PICKUP DEVICE FOR RECORDING OR REPRODUCING INFORMATION TO  
AND FROM A MULTI-LAYERED RECORDING MEDIUM

**IN THE CLAIMS:**

Claims 2, 3 and 5 have been canceled without prejudice or disclaimer.

Claim 1 has been amended as follows.

1. (Amended) A pickup device of an apparatus for recording or reproducing information, by irradiation of a light beam, to and from a multi-layered recording medium having a plurality of recording layers laminated through spacer layers [and formed on the recording layer a pre-pit region having a reflectivity different from a reflectivity of the surrounding], the device comprising:

an illumination optical system including an objective lens for focusing a light beam onto any of said recording layers of said multi-layered recording medium; and

a detecting optical system including a photodetector for receiving and photoelectrically converting reflection light from said recording layer of said multi-layered recording medium through said objective lens; wherein said photodetector has a normalized detector size  $(B/\beta^2)$  of a size of  $10\ \mu\text{m}^2$  to  $50\ \mu\text{m}^2$ , and

wherein the normalized detector size  $(B/\beta^2)$  is given by an equation of

$$\underline{B/\beta^2 = L^2 / (f_c/f_{OB})^2}$$

wherein L denotes a size of one side of the photodetector,  $f_c$  denotes a focal distance of the detecting optical system and  $f_{OB}$  denotes a focal distance of the objective lens.